

ABSTRACT

A self-adjusting adaptive input circuit with minimal excess noise and a linear charge-handling capacity exceeding 10^9 electrons to enable high-quality imaging at long wavelength infrared backgrounds and video frame rates is disclosed. An integration capacitor stores a charge produced from a photodetector. A self-adjusting current source skims a current during
5 integration on the integration capacitor. The gate voltage of a skimming transistor is set via a programming transistor in order to set the skim level.

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